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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/603,902

06/24/2003

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Dworza.W-01

4885

7590 03/13/2008
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EXAMINER

GRAHAM, GARY K

ART UNIT

PAPER NUMBER

3723

MAIL DATE

DELIVERY MODE

03/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/603,902	DWORZAN, WILLIAM S.	
	Examiner	Art Unit	
	Gary K. Graham	3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 6-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not appear to describe the handle and neck portion being threadably engaged. The drawings do not clearly show such a threaded engagement between the handle and neck portion. Also, the specification does not appear to describe that the head, neck and weight provide an **undamped** resonant frequency of vibration approximately matched to the rotational speed of the motor. There appears no basis for such undamped resonant frequency. Further, it would appear the coupling (1312), which is defined in the specification as a flexible tube, would provide at least some damping to the weight. Clarification is requested.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 11, 13-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hahn et al (US patent 5,987,681) in view of Staar (US patent 5,165,131).

The patent to Hahn discloses the invention substantially as is claimed, including a removable head (2) with bristles (21) thereon integrally supported by neck portion (3). The neck portion is directly engaged with and removably secured to a portion (31) of the handle (1). Note the alternative embodiment shown in figure 2 wherein separation line (S) is shown from which the neck portion can be removed (col. 3, lines 39+) from the portion (31) of the handle. An eccentrically mounted weight (5) is provided on flexible shaft (51, 7a, 6) and is rotated by motor (4) via drive shaft (41) and flexible coupling (7b). The flexible shaft terminates in an anchored bearing (52) adjacent the weight. The flexible shaft is considered isolated from the neck portion (3). Note that any portion can be selected for the neck portion which is not contacted by the shaft. The weight is shown provided next to the head (2), but it is disclosed that it may be mounted within the head if so desired (col. 3, lines 25+).

The patent to Hahn discloses all of the above recited subject matter with the exception of the head, neck and weight having a resonant frequency of vibration approximately matched to the rotational speed of the motor, a particular resonant frequency and an electrical source for the motor being a battery.

The patent to Staar discloses a toothbrush (fig.3) having a vibrator (17-19) mounted within the handle (10) thereof to provide vibrations to the head (20) and thus bristles (22) to enhance cleaning. Staar discloses that the most effective frequencies of vibration are between 1,000 to 17,000 Hz (col. 6, lines 7-17) for best cleaning function. Staar further discloses that if the exciting frequency is chosen so as to be near the resonant frequency of the moving assembly the brush can be vibrated with great force using only small exciting voltage (col. 6, lines 18-21). It should be noted that vibrating a system at its resonant frequency is known to achieve maximum vibratory force with minimal input power. Such is what is suggested by Staar within a vibratory toothbrush. Staar also discloses using a battery (46) to power the vibratory toothbrush (fig.8).

It would have been obvious to one of skill in the art to adjust or optimize the toothbrush of Hahn et al, such that the moving assembly or head, neck and weight provide a resonant frequency of vibration matched to the rotational speed of the motor, as suggested by Staar, such that maximum vibratory force can be achieved with minimal input power. Note that in Hahn, the motor provides the input power to the eccentric weight by rotation thereof. Thus, in Hahn, to achieve frequency matching, one would match the resonant frequency of the moving assembly to the rotational speed of the motor.

It also would have been obvious to one of skill in the art to vibrate the brush head of Hahn between 1,000 and 17,000 Hz, as clearly suggested by Staar, to provide the most effective brushing of teeth. Selection of vibration frequencies in this range is known for vibratory toothbrushes.

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It also would have been obvious to power the toothbrush of Hahn by a battery, as clearly suggested by Staar, to eliminate the need for a power cord and thus increase the portability of the toothbrush. Note that use of batteries in electric toothbrushes is well known.

With respect to claim 11, as the head of Hahn includes bristles only on one side, it appears the center of mass will be shifted to one side of the drive shaft as is claimed.

Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hahn et al (US patent 5,987,681) in view of Staar (US patent 5,165,131) as applied to claim 1 above, and further in view of Bock (US patent 5,247,716).

The patents to Hahn and Staar disclose all of the above recited subject matter with the exception of the bristles being mounted in a removable brush and there being slidable engagement means to attach the brush to the head.

The patent to Bock discloses a toothbrush (20, fig.1) that includes a vibration generator (26) to enhance the cleaning effect of the toothbrush. Bock also discloses the brush (32) being slidably removable and using a tab (40) on the brush engageable with a tab receiver (42) on the supporting portion for releasably securing the brush with the handle (22).

It would have been obvious to one of skill in the art to provide the modified brush of Hahn as removable, as clearly suggested by Bock, to enable brush only head replacement when the bristle become worn.

Response to Arguments

Applicant's arguments filed 15 April 2005 and 1 December 2007 have been fully considered but they are not persuasive. Applicant argues that Hahn does not use a self supporting wire shaft. Such is not persuasive. The shaft (51,7a,6) of Hahn is considered to be self supporting, at least as far as such defines any particular structure.

Applicant argues that Hahn does not effect both rotational and lateral movement. Such is not persuasive. As Hahn has the same structure as claimed, it will provide the same movement as claimed. Further, the weight of Hahn does rotate to impart lateral movement to the brush head. Thus, it appears that the weight of Hahn does effect rotational and lateral movement as discussed by Applicant. Note that the section of Applicant's specification he refers to as a basis for such movement discusses the rotation of the weight to transfer lateral thrusts. Hahn clearly performs in this manner.

Applicant argues that his wire shaft is isolated from the interior wall of the neck portion. However, as set forth above, note that any part of the neck of Hahn can be called the neck "portion" from which the flexible or wire shaft is free from contact.

Applicant's argument with respect to claim 12, is noted, however, as set forth above, there does not appear to be a basis for such a connection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary K. Graham whose telephone number is 571-272-1274. The examiner can normally be reached on Tuesday to Friday (6:30-4:00).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph J. Hail can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gary K Graham/
Primary Examiner, Art Unit 3723

GKG
03 March 3, 2008